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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/848,774	05/03/2001	Igor Gonda	AERX058CON3	8982

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EXAMINER	
LEWIS, AARON J	
ART UNIT	**PAPER NUMBER**
3761	

DATE MAILED: 06/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)
09/848,774	IGOR GONDA ET AL.
Examiner	**Art Unit**
AARON J. LEWIS	3761

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *THREE* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *May 3, 2001*.

2a) ☐ This action is **FINAL.** 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-21* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). *1*
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Objections

1. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 32-52 been renumbered 1-21 and will be referred to as claims 1-21 hereafter.

In the preliminary amendment received 05/03/2001, page 2, applicant instructs the PTO to cancel claims 21-31 without prejudice and add the following new claims 32-52; however, the only claims present in the instant application are claims 32-52; accordingly, only claims 32-52 have been examined.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "contacting the insulin with a compressed gas" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Double Patenting

3. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

4. Claims 1-21 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-21 of copending Application No. 09/848,772. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-3,12,13,17 are rejected under 35 U.S.C. 102(b) as being anticipated by Laube et al.('094).

As to claim 1, Laube et al. disclose a method of treating diabetes mellitus in a patient in need thereof, said method comprising: supplying a predetermined amount of insulin to a hand held device (14,col.4, lines 41-50), said predetermined amount being in excess of that amount required, in the bloodstream of the patient, to produce or maintain an acceptable serum glucose level in the patient (i.e. the amount in canister 14 and in jet nebulizer disclosed at col.4, line 42 includes enough insulin for several administrations which taken together exceed any amount required to produce or maintain an acceptable serum glucose level); contacting said insulin with a compressed gas to form a cloud in said hand held device (#30,#50,#70 and col.4, lines 46-50), said cloud comprising a repeatable amount of insulin (col.5, lines 1-12), said repeatable amount being in excess of that amount required, in the bloodstream of the patient, to produce or maintain an acceptable serum glucose level in the patient (col.5, lines 6-14); and inhaling said cloud at an inspiratory flow rate and volume (col.5, lines 53-55) adapted to deliver a portion of said cloud to the lungs of the patient, wherein an amount of said insulin in said cloud effective, in the bloodstream of the patient, to produce or maintain an acceptable serum glucose level in the patient is absorbed into the bloodstream of the patient (col.5, lines 6-14).

As to claim 2, Laube et al. disclose a method of treating diabetes mellitus in a patient in need thereof, said method comprising: supplying a predetermined amount of insulin to a hand held

device (14,col.4, lines 41-50), said predetermined amount being in excess of that amount required, in the bloodstream of the patient, to produce or maintain an acceptable serum glucose level in the patient (i.e. the amount in canister 14 and in jet nebulizer disclosed at col.4, line 42 includes enough insulin for several administrations which taken together exceed any amount required to produce or maintain an acceptable serum glucose level); contacting said insulin with a compressed gas to form a cloud in said hand held device (#30,#50,#70 and col.4, lines 46-50), said cloud comprising a repeatable and controlled (i.e. 0.2U/kg body weight) amount of insulin (col.5, lines 1-12), said repeatable and controlled amount being in excess of that amount required, in the bloodstream of the patient, to produce or maintain an acceptable serum glucose level in the patient (col.5, lines 6-14); and inhaling said cloud at an inspiratory flow rate and volume (col.5, lines 53-55) adapted to deliver a portion of said cloud to the lungs of the patient, wherein an amount of said insulin in said cloud effective, in the bloodstream of the patient, to produce or maintain an acceptable serum glucose level in the patient is absorbed into the bloodstream of the patient (col.5, lines 6-14).

As to claim 3, Laube et al. disclose mechanically supplying a predetermined amount of insulin to a given area (14,col.4, lines 41-50) of a hand held device, said predetermined amount being in excess of that amount required, in the bloodstream of the patient, to produce or maintain an acceptable serum glucose level in the patient (i.e. the amount in canister 14 and in jet nebulizer disclosed at col.4, line 42 includes enough insulin for several administrations which taken together exceed any amount required to produce or maintain an acceptable serum glucose level);

aerosolizing said insulin with a compressed gas to form a cloud in said hand held device (#30,#50,#70 and col.4, lines 46-50), said cloud comprising a repeatable and controlled amount of insulin, said repeatable and controlled (i.e. 0.2U/kg body weight) amount (col.5, lines 1-12) being in excess of that amount required, in the bloodstream of said patient, to produce or maintain an acceptable serum glucose level in the patient (col.5, lines 6-14); and inhaling said cloud at an inspiratory flow rate and volume (col.5, lines 53-55) adapted to deliver a portion of said cloud to the lungs of the patient, wherein an amount of insulin in said cloud effective, in the bloodstream of the patient, to produce or maintain an acceptable serum glucose level in the patient is absorbed into the bloodstream of the patient (col.5, lines 6-14).

As to claims 12 and 13, Laube et al. as discussed above, also teach determining the amount of insulin required, in the bloodstream of a patient, to produce or maintain an acceptable serum glucose level (col.3, lines 13-21).

As to claim 17, Laube et al. as discussed above, also teach repeating the administration of insulin with a second predetermined amount which is the same as or different from the first predetermined amount and is in excess of the amount of insulin required, in the bloodstream of a patient, to produce or maintain an acceptable serum glucose level (col.6, lines 44-45 and Table 2).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 4-11,16,18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laube et al.('094) in view of Newhouse et al.('947).

As to claim 4, Laube et al. disclose a method of treating diabetes mellitus in a patient in need thereof, said method comprising: supplying a predetermined amount of insulin to a hand held device (14,col.4, lines 41-50), said predetermined amount being in excess of that amount required, in the bloodstream of the patient, to produce or maintain an acceptable serum glucose level in the patient (i.e. the amount in canister 14 and in jet nebulizer disclosed at col.4, line 42 includes enough insulin for several administrations which taken together exceed any amount required to produce or maintain an acceptable serum glucose level); contacting said insulin with a compressed gas to form a cloud in said hand held device (#30,#50,#70 and col.4, lines 46-50), said cloud comprising a repeatable and controlled (i.e. 0.2U/kg body weight) amount of insulin (col.5, lines 1-12), said repeatable and controlled amount being in excess of that amount required, in the bloodstream of the patient, to produce or maintain an acceptable serum glucose level in the patient (col.5, lines 6-14); and inhaling said cloud at an inspiratory flow rate and volume (col.5, lines 53-55) adapted to deliver a portion of said cloud to the lungs of the patient, wherein an amount of said insulin in said cloud effective, in the bloodstream of the patient, to produce or maintain an acceptable serum glucose level in the patient is absorbed into the bloodstream of the patient (col.5, lines 6-14).

The difference between Laube et al. and claim 4 is insulin being in the form of dry powder.

Newhouse et al. teach contacting dry powdered medicament with a compressed gas to form a cloud in a hand held device (fig.4 and col.4, lines 54-60). The disclosed advantages of providing medicament in powdered form include very fine respirable particles requiring much smaller doses and greatly decreasing losses of medication in a patient's throat.

It would have been obvious to modify the form of the insulin in Laube et al. to be in powdered form because the powder form would have provided almost exclusively fine and thus respirable particles which require smaller doses and would have exhibited greatly decreased losses of medication in a patient's throat as taught by Newhouse et al..

As to claim 5, Laube et al. as modified by Newhouse et al. (see fig.4) as discussed above, also teach mechanically supplying a predetermined amount of insulin in the form of dry powder to a given area of a hand held device.

As to claim 6, the difference between Laube et al. as modified by Newhouse et al. is a predetermined amount of insulin being 2-10 times the amount required to produce or maintain an acceptable serum glucose level. Since Laube et al. (col.5, lines 23-48) disclose the loss of at least 50 U within a holding chamber, it would have been obvious to modify the amount of insulin delivered to patients to an amount which would exceed an amount necessary to produce or maintain acceptable serum glucose levels, including amounts within a range of 2-10 times an amount required to produce or maintain acceptable serum glucose levels.

Claim 7 is substantially equivalent in scope to claim 6 and is included in Laube et al. as modified by Newhouse et al. for the reasons set forth above wtih respect to claim 6.

As to claim 8, Laube et al. as modified by Newhouse et al. as discussed above with respect to claim 6 also teach variance in the amount of insulin actually absorbed into a patient's bloodstream (see table 2 under Peak Insulin Level). At least 1-30 Units of insulin were absorbed into each patient's bloodstream; however, it is submitted that the amount of insulin absorbed can be arrived at through mere routine obvious experimentation and observation. That is, the amount of insulin delivered to each patient and thus the amount of insulin actually absorbed (as illustrated by Laube et al.) would depend upon a variety of factors including age, weight, sex as well as other pre-existing medical conditions.

Claim 9 is substantially equivalent in scope to claim 8 and is included in Laube et al. as modified by Newhouse et al. for the reasons set forth above with respect to claim 8.

Claims 10 and 11 are substantially equivalent in scope to claims 8 and 9 with the exception of the predetermined amount of insulin being 2-300 units of insulin. Since Laube et al. (col.5, lines 23-48) disclose the loss of at least 50 U within a holding chamber, it would have been obvious to modify the amount of insulin delivered to patients to an amount which would exceed an amount necessary to produce or maintain acceptable serum glucose levels, including amounts within a range of 2-300 units to compensate for such losses. Laube et al. as modified by Newhouse et al. as discussed above with respect to claim 6 also teach variance in the amount of insulin actually absorbed into a patient's bloodstream (see table 2 under Peak Insulin Level). At least 1-30 Units of insulin were absorbed into each patient's bloodstream; however, it is submitted that the amount of insulin absorbed can be arrived at through mere routine obvious

experimentation and observation. That is, the amount of insulin delivered to each patient and thus the amount of insulin actually absorbed (as illustrated by Laube et al.) would depend upon a variety of factors including age, weight, sex as well as other pre-existing medical conditions.

The differeces bewteen Laube et al. and claim 15 are a required amount of between 1-30 units of insulin, aerosolizing 2-10 times the amount of insulin required to produce or maintain an acceptable serum glucose level and the amount of aborbed insulin being 1-30 units.

Since Laube et al. (col.5, lines 23-48) disclose the loss of at least 50 U within a holding chamber, it would have been obvious to modify the amount of insulin delivered to patients to an amount which would exceed an amount necessary to produce or maintain acceptable serum glucose levels, including amounts within a range of 2-10 times an amount required to produce or maintain acceptable serum glucose levels. During typical insulin therapy of a diabetic patient the amount of insulin initially administered to diabetic patients is typically arrived at by delivering an amount which is equivalent to the amount of insulin which is typically generated by a non-diabetic patient of the same general weight and sex and the subject patient. The amount given in subsequent administrations may be varied in dependence upon the concentration of blood glucose and upon the amount of glucose detected in the subject patient's urine. Consequently, during typical insulin therapy the amount of insulin administered to patients is arrived at through mere routine obvious experimentation and observation.

Claim 16 is substantially equivalent in scope to claim 15 and is included in Laube et al. as modified by Newhouse et al. for the reasons set forth above with respect to claim 15.

Claims 18-21 are substantially equivalent in scope to claim 17 with the exceptions of dosage amount of insulin and the form of insullin being dry powder. Therefore, claims 18-21 are included in Laube et al. as modified by Newhouse et al. for the reasons set forth above with respect to claim 17, that is, Laube et al. teach repeating the administration of insulin with a second predetermined amount which is the same as or different from the first predetermined amount and is in excess of the amount of insulin required, in the bloodstream of a patient, to produce or maintain an acceptable serum glucose level (col.6, lines 44-45 and Table 2) and for the reasons set forth above with respect to the administration of variable amounts of insulin, that is, since Laube et al. (col.5, lines 23-48) disclose the loss of at least 50 U within a holding chamber, it would have been obvious to modify the amount of insulin delivered to patients to an amount which would exceed an amount necessary to produce or maintain acceptable serum glucose levels, including amounts within a range of 2-10 times an amount required to produce or maintain acceptable serum glucose levels. During typical insulin therapy of a diabetic patient the amount of insulin initially administered to diabetic patients is typically arrived at by delivering an amount which is equivalent to the amount of insulin which is typically generated by a non-diabetic patient of the same general weight and sex and the subject patient. The amount given in subsequent administrations may be varied in dependence upon the concentration of blood glucose and upon the amount of glucose detected in the subject patient's urine. Consequently, during typical insulin therapy the amount of insulin administered to patients is arrived at through mere routine obvious experimentation and observation..

9. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Laube et al.('094).

The difference between Laube et al. and claim 14 is a predetermined amount of insulin 2 to 10 times the amount required to produce or maintain an acceptable serum glucose level.

Since Laube et al. (col.5, lines 23-48) disclose the loss of at least 50 U within a holding chamber, it would have been obvious to modify the amount of insulin delivered to patients to an amount which would exceed an amount necessary to produce or maintain acceptable serum glucose levels, including amounts within a range of 2-10 times an amount required to produce or maintain acceptable serum glucose levels. During typical insulin therapy of a diabetic patient the amount of insulin initially administered to diabetic patients is typically arrived at by delivering an amount which is equivalent to the amount of insulin which is typically generated by a non-diabetic patient of the same general weight and sex and the subject patient. The amount given in subsequent administrations may be varied in dependence upon the concentration of blood glucose and upon the amount of glucose detected in the subject patient's urine. Consequently, during typical insulin therapy the amount of insulin administered to patients is arrived at through mere routine obvious experimentation and observation.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The balance of the art is cited to show relevant methods of treating diabetes mellitus in patients. Further, a photocopy of text pages 1986-1987 are cited from "Harrison's Principles of Internal Medicine" to show typical methods of treating diabetes mellitus which includes the

variance of the amount of insulin administered to a given patient in dependence upon the response of serum glucose level. While the methods described therein are drawn to subcutaneous injection, the thrust of that method is the production and maintainence of serum glucose at acceptable levels.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron J. Lewis whose telephone number is (703) 308-0716.

Aaron J. Lewis

June 23, 2002

Aaron J. Lewis
Primary Examiner